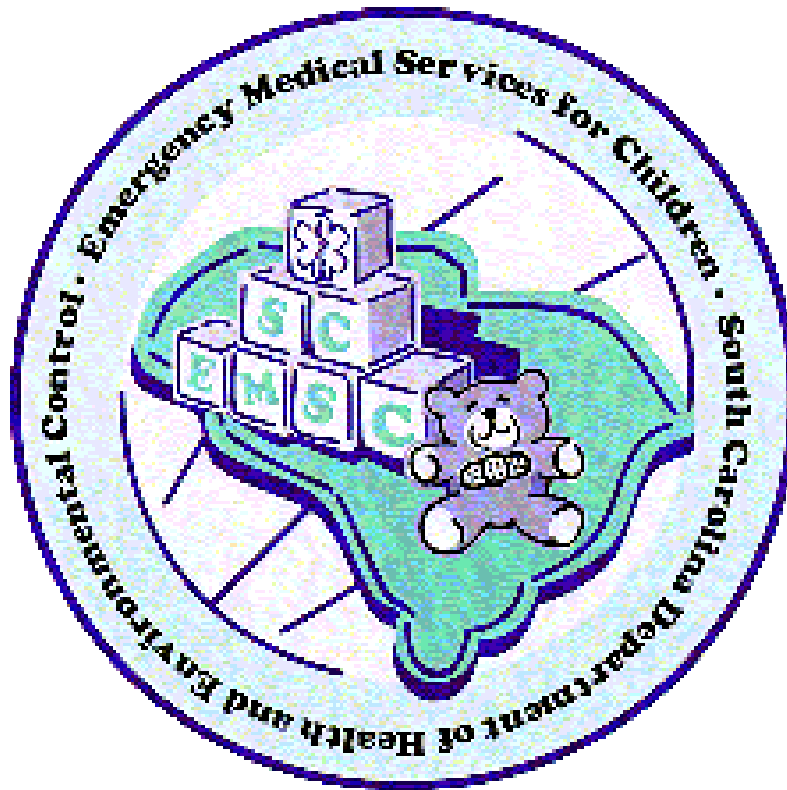


SOUTH CAROLINA PEDIATRIC PREHOSPITAL PROTOCOLS

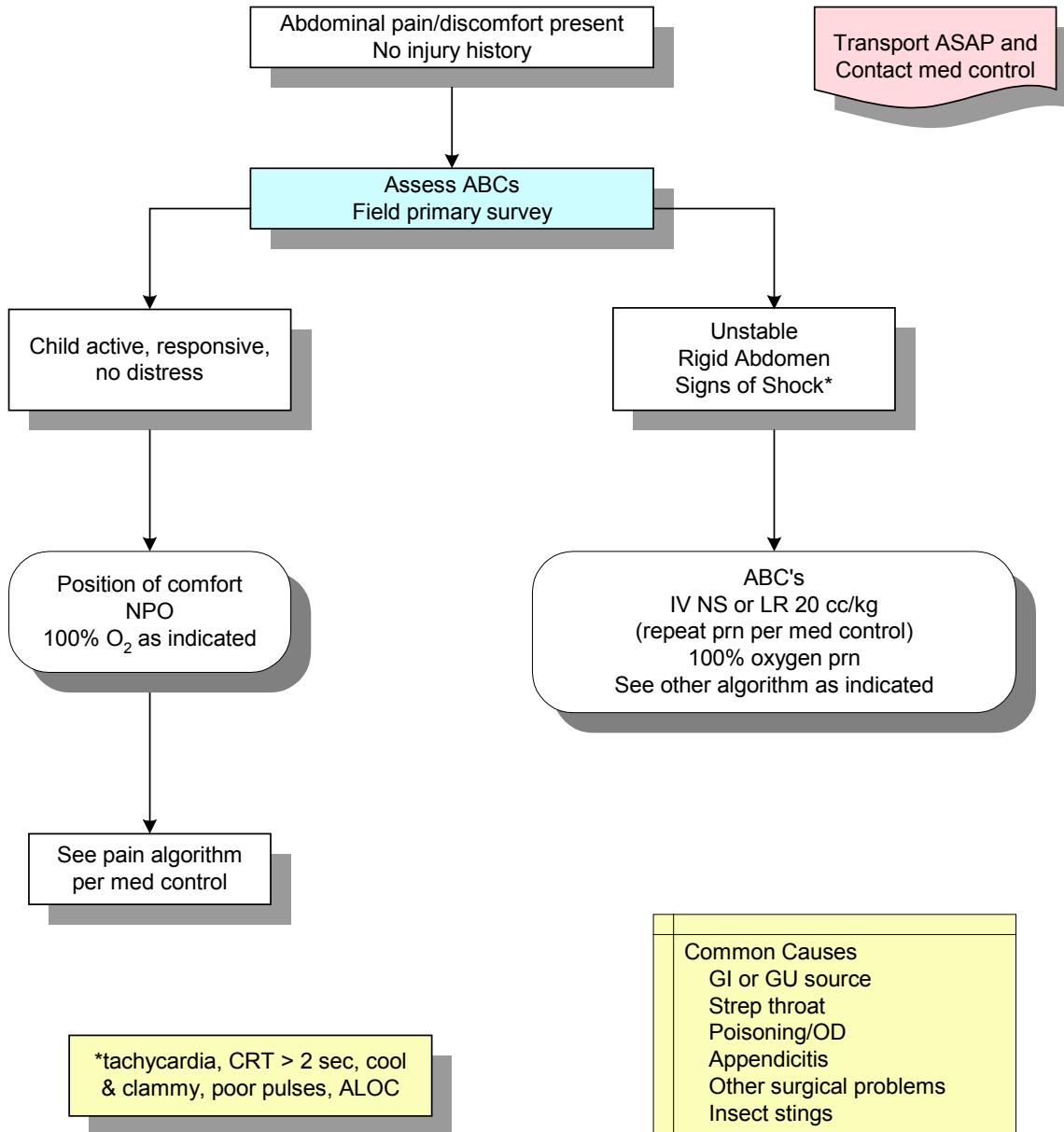


Developed by the
Emergency Medical Services for Children
Pediatric Protocols/Equipment Subcommittee

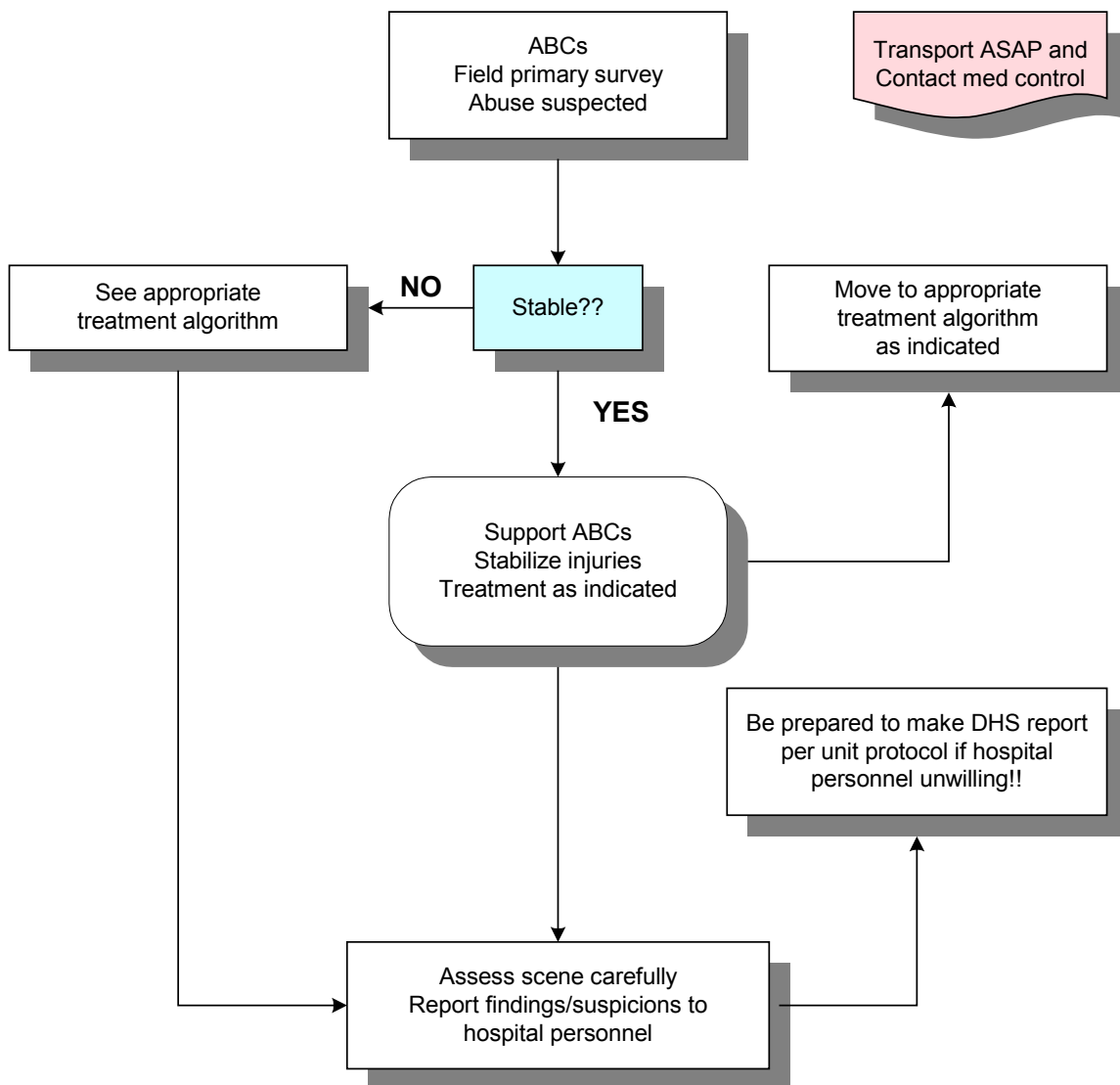
Pediatric Field Primary Survey

Field Primary Survey	Special Considerations
<ol style="list-style-type: none"> 1. Establish level of responsiveness. <ul style="list-style-type: none"> • Playfulness • Distractability • Position • Distress • Color • Consolability • Interaction • Anxiety • Eye Contact 2. Evaluate airway and protective airway reflexes. [2] 3. Basic airway/spinal immobilization prn. [3,4] 4. Oxygen prn. [5] 5. Assist ventilation prn. [6,7] 6. Stop hemorrhage. Evaluate and support circulation. [8,9] 7. Do environmental assessment, including consideration of intentional injury. 8. Determine appropriate treatment protocol. 	<ol style="list-style-type: none"> [1] Determine scene safety. [2] Identify signs of airway obstruction and respiratory distress, including: <ul style="list-style-type: none"> • cyanosis • stridor • drooling • nasal flaring • choking • grunting • intercostal retractions • absent breath sounds • bradycardia • apnea/bradypnea • tachypnea [3] Open airway using suction, jaw thrust and chin lift (or head tilt if no suspected spinal trauma). Consider oropharyngeal airway if child unconscious. [4] If c-spine trauma suspected, immobilize spine with cervical immobilization device and backboard. Infants and young children may require under-shoulder support to achieve neutral c-spine position. [5] Use nasopharyngeal or oropharyngeal airway, mask, or O₂ blow-by, as tolerated, with child in position of comfort. [6] Use chest rise as indicator of adequate ventilation. If inadequate, consider: <ul style="list-style-type: none"> • repositioning the airway • foreign body in the airway • inadequate bag volume or pop-off valve on [7] Rescue breathing includes 2 initial slow breaths (1½ sec) then rate of 20/min for infant or child. [8] Assess perfusion using: <ul style="list-style-type: none"> • heart rate • skin signs • capillary refill • mental status • quality of pulse • blood pressure (LATE) [9] Compression rate: 120/min. infant, 100/min. child with 5:1 ratio with ventilations. Depths are ½ - 1" infant, 1 - 1½" child.

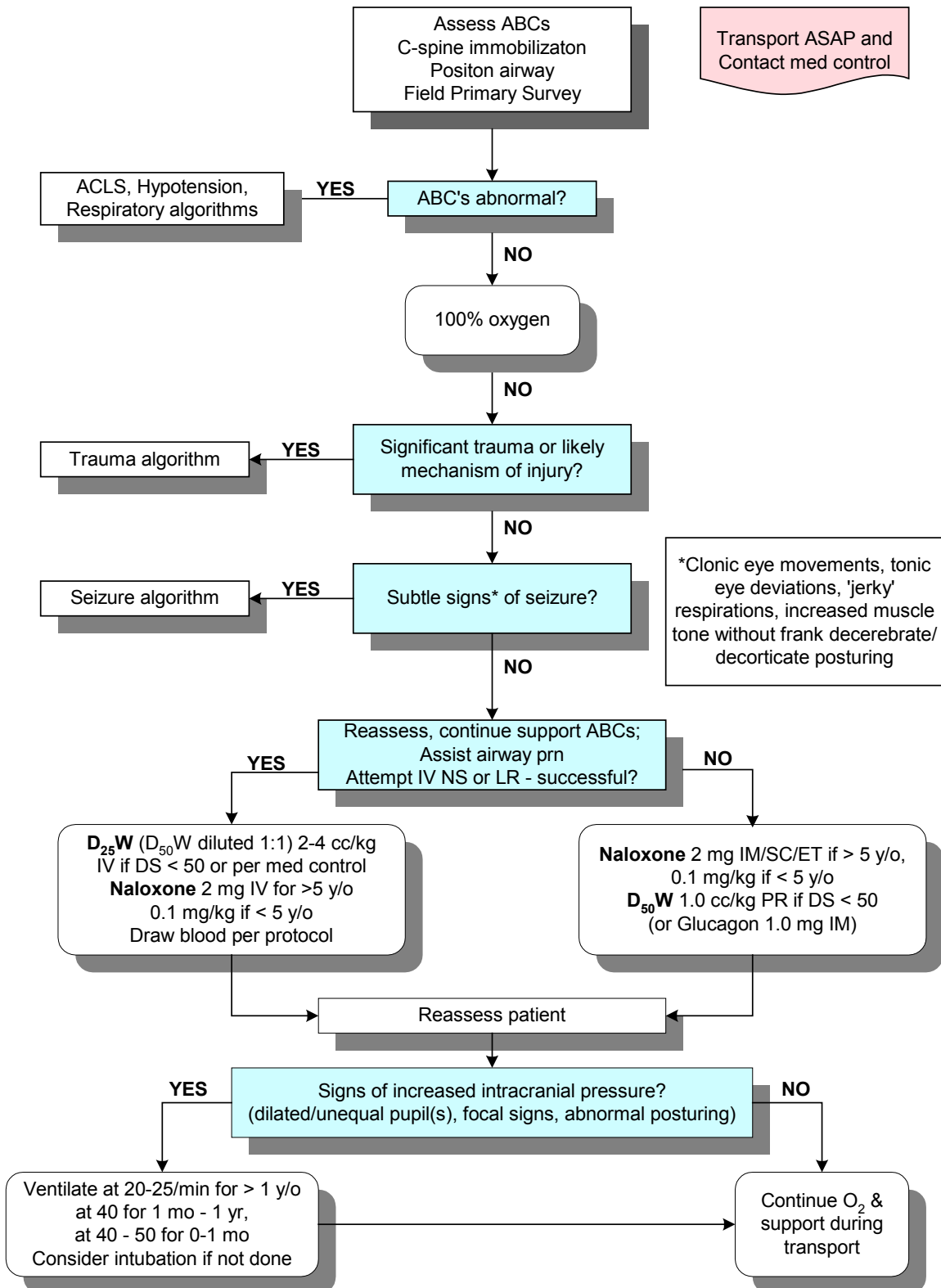
Pediatric Abdominal Distress: Non-Trauma



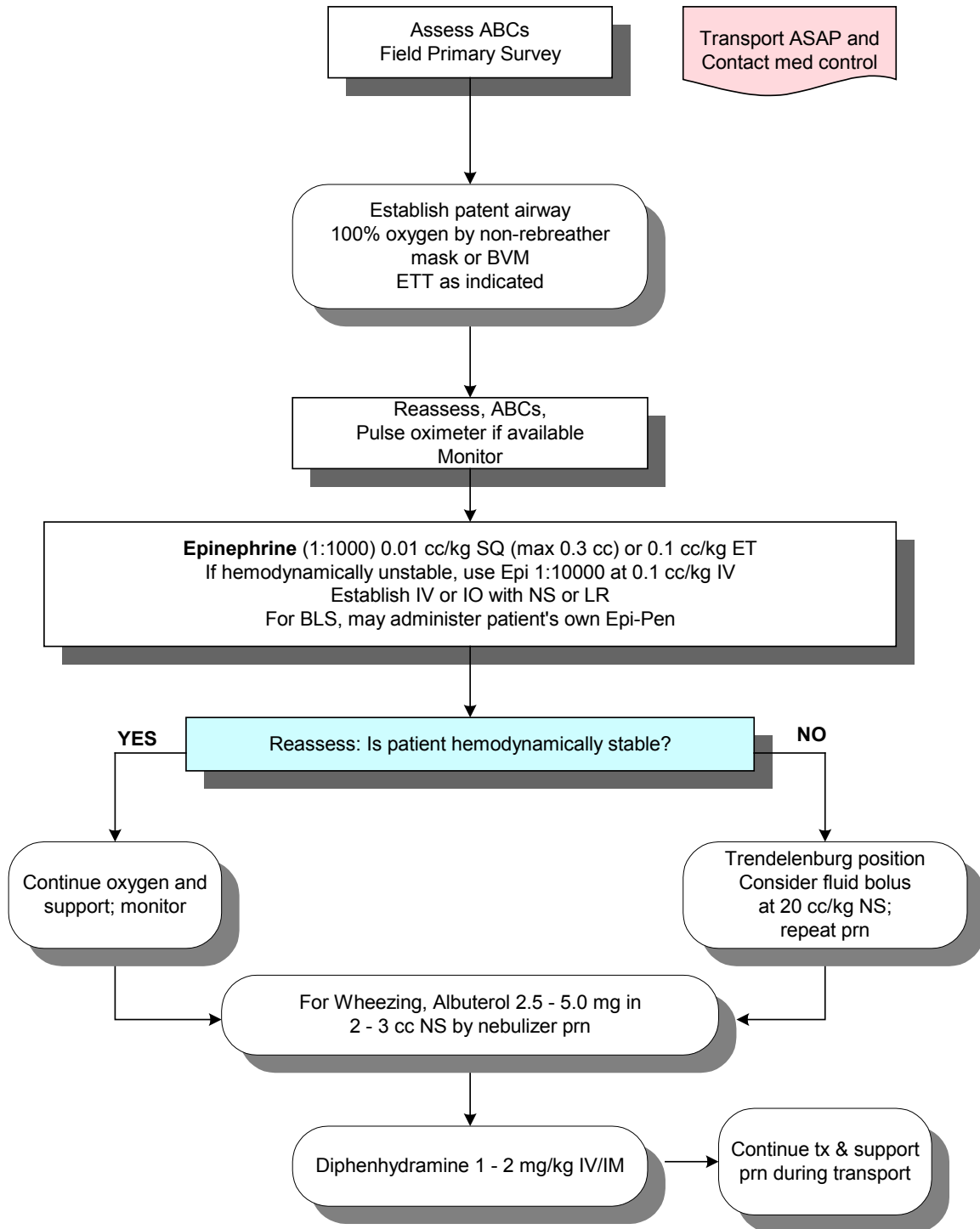
Child Abuse



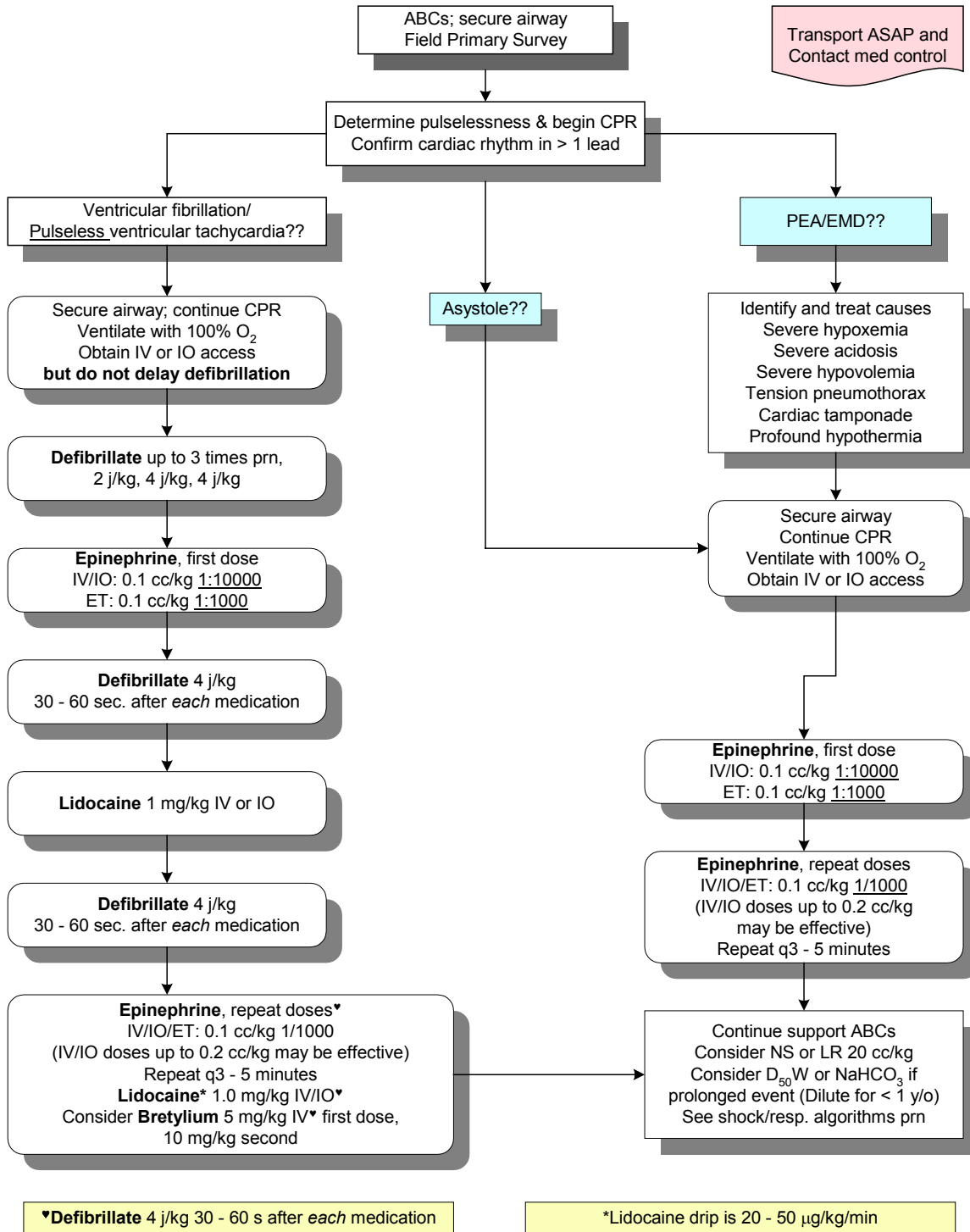
Pediatric Altered Level of Consciousness



Pediatric Anaphylaxis



Pediatric Asystole/Pulseless Arrest



Pediatric Bradycardia

Bradycardia in children is usually due to **respiratory** causes or acidosis; i.e., not cardiac

Assess ABCs
Secure airway; ventilate with 100% O₂
Obtain IV or IO access
Field Primary Survey

Transport ASAP and
Contact med control

Severe cardiopulmonary compromise?
- Poor perfusion?
- Hypotension?
- Respiratory difficulty?

NO

YES

Observe
Support ABCs; monitor
Pulse oximetry if available

Secure airway
If signs of decreased perfusion and HR < 80 in an infant
or HR < 60 in < 5 y/o, consider CPR
IV/IO NS or LR

Epinephrine

- IV/IO 0.1 cc/kg 1:10000
- ET: 0.1 cc/kg 1:1000
- Repeat q3 - 5 min at same dose

Atropine 0.02 mg/kg IV/IO/ET

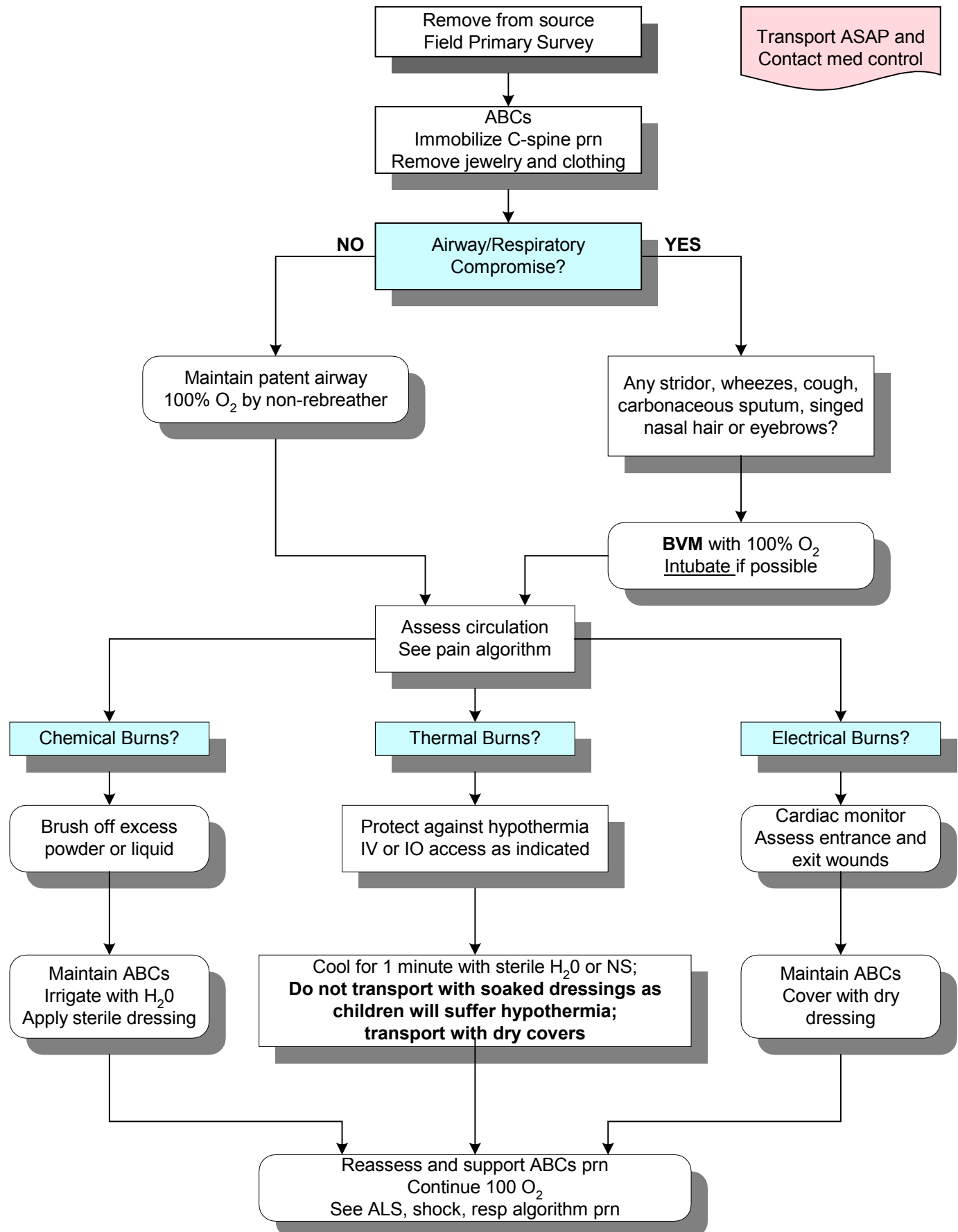
- min. dose: 0.1 mg
 - max. single dose 0.5 mg child
1.0 mg adol.
- May be repeated once

Consider treatment of specific cause if persists
despite adequate ventilation and oxygenation:
Hypoglycemia
Severe acidosis
Consider fluid challenge: NS 20 cc/kg
Review History

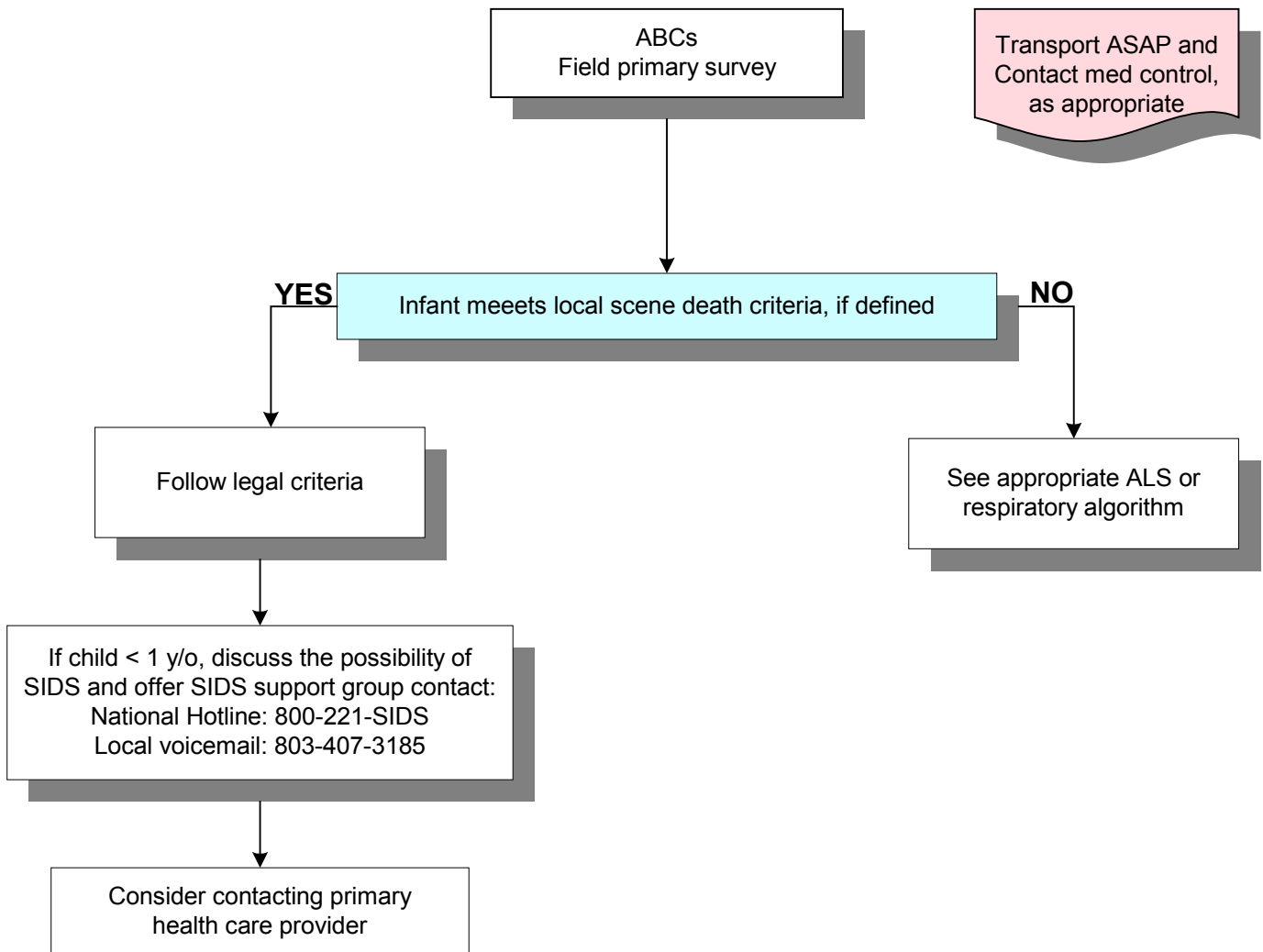
Continue support ABCs
Monitor, pulse oximetry if available
If asystole/PEA develops, see appropriate algorithm

Note: Special conditions may apply in
the presence of severe hypothermia.
See hypothermia algorithm prn.

Pediatric Burns



Infant/Child Death



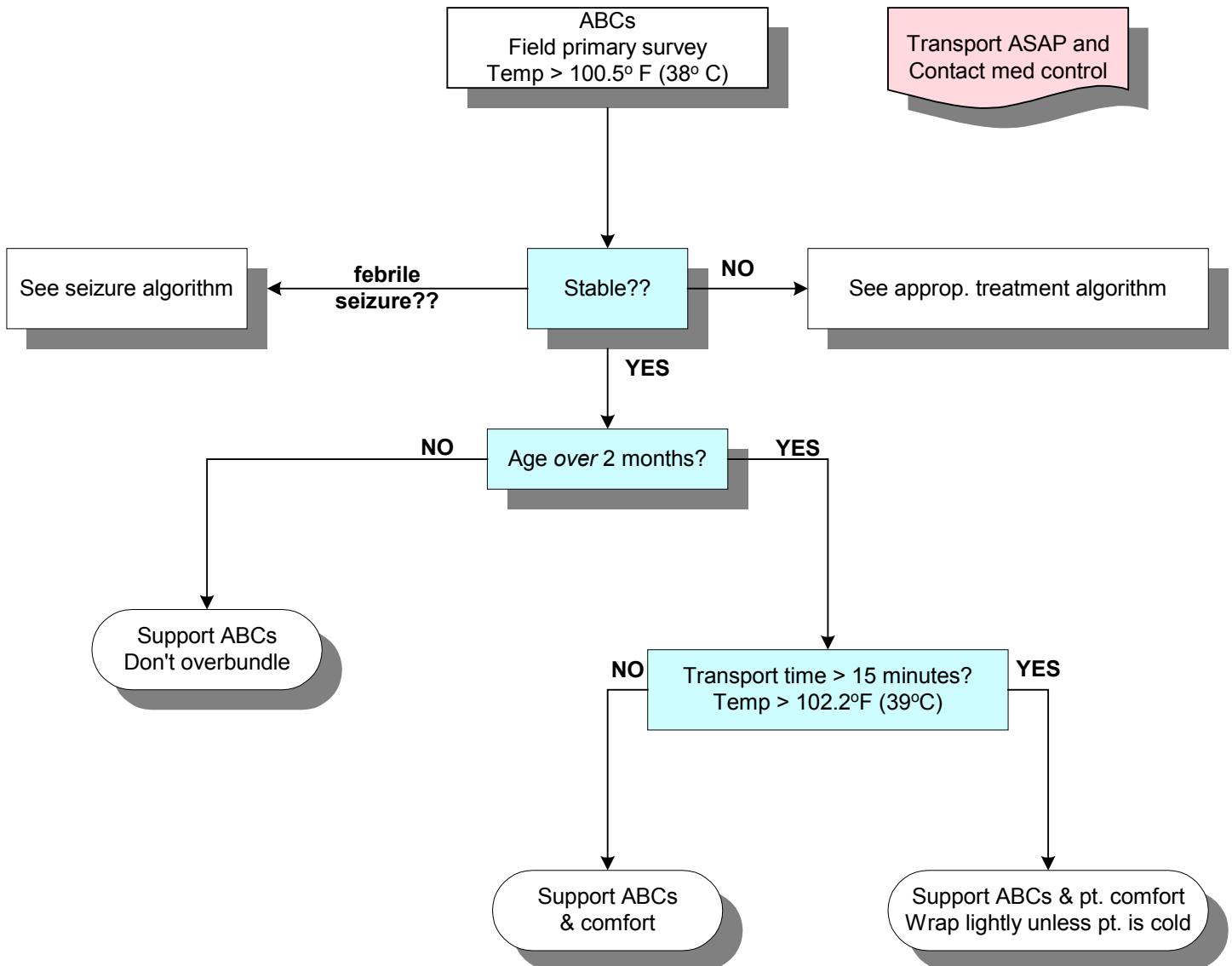
Assessment of the scene is very important. Child abuse must be considered as a possible etiology.

Guilt and blame are significant components in a family with an unexplained child death.

Obtain information as discretely as possible and provide support to family members present, regardless of suspicions.

Sudden unexplained death during sleep in children < 1 y/o may be SIDS.

Pediatric Fever



Transport ASAP and
Contact med control

See seizure algorithm

febrile
seizure??

Stable??

NO

See approp. treatment algorithm

YES

NO

Age over 2 months?

YES

Support ABCs
Don't overbundle

NO

Transport time > 15 minutes?
Temp > 102.2°F (39°C)

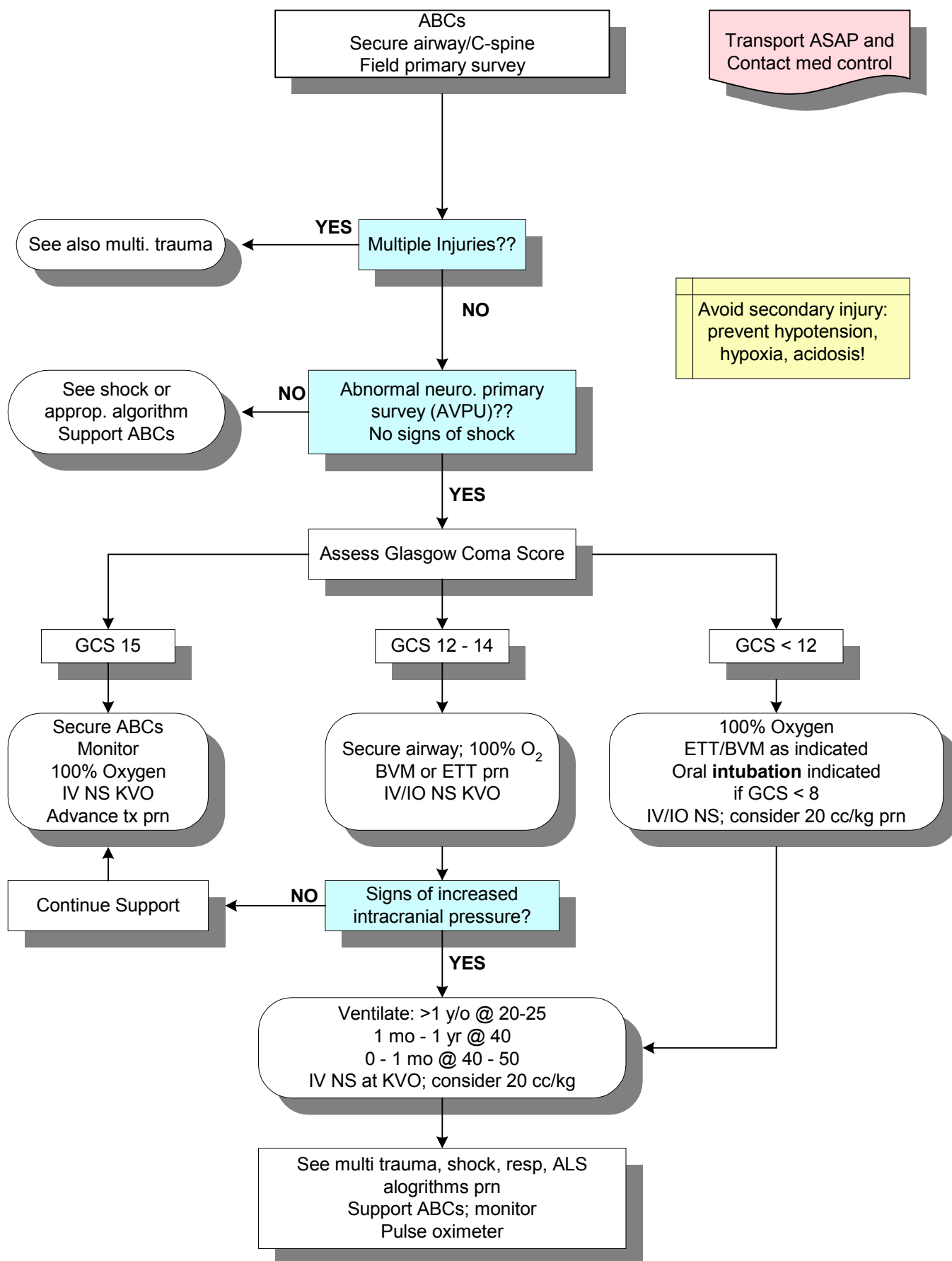
YES

Support ABCs
& comfort

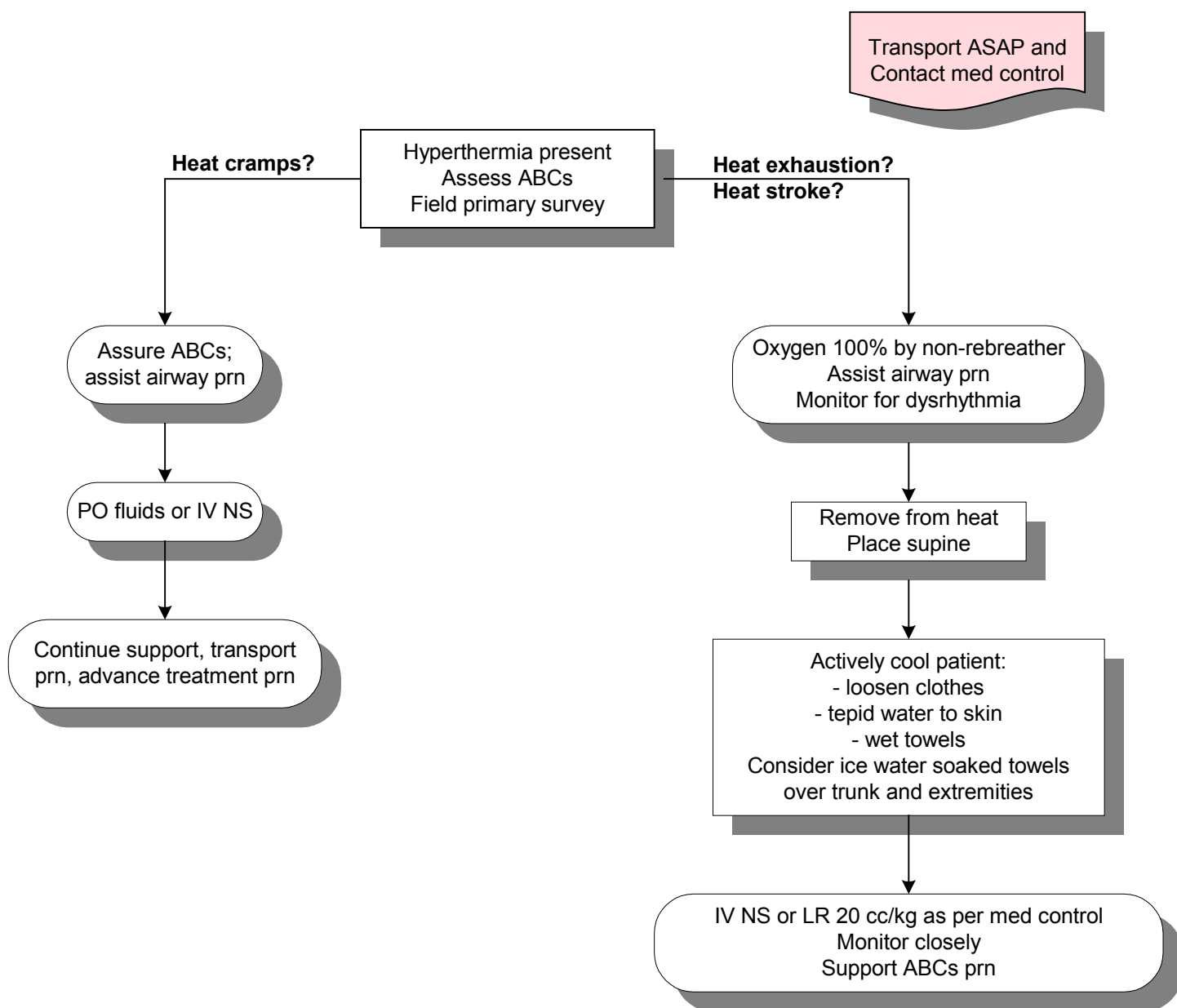
Support ABCs & pt. comfort
Wrap lightly unless pt. is cold

Fever in an otherwise healthy child is not dangerous or harmful, just uncomfortable (even at 105 - 106).
Parents will need reassurance in most cases.

Pediatric Head Trauma

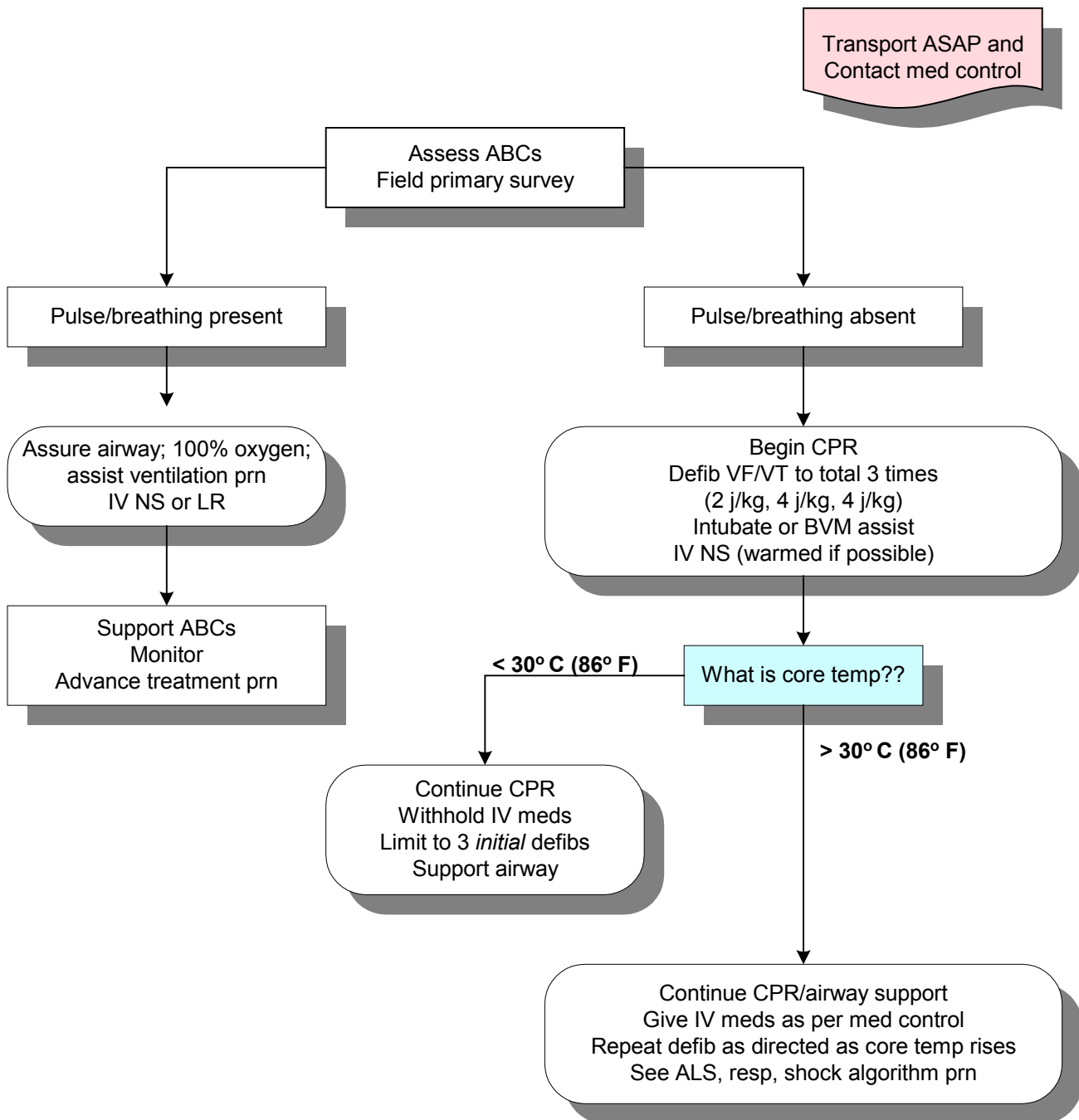


Pediatric Hyperthermia*



***Hyperthermia does not refer to physiologic temperature elevation in normal children with acute minor illness, nor to those who have febrile seizures.**

Pediatric Hypothermia

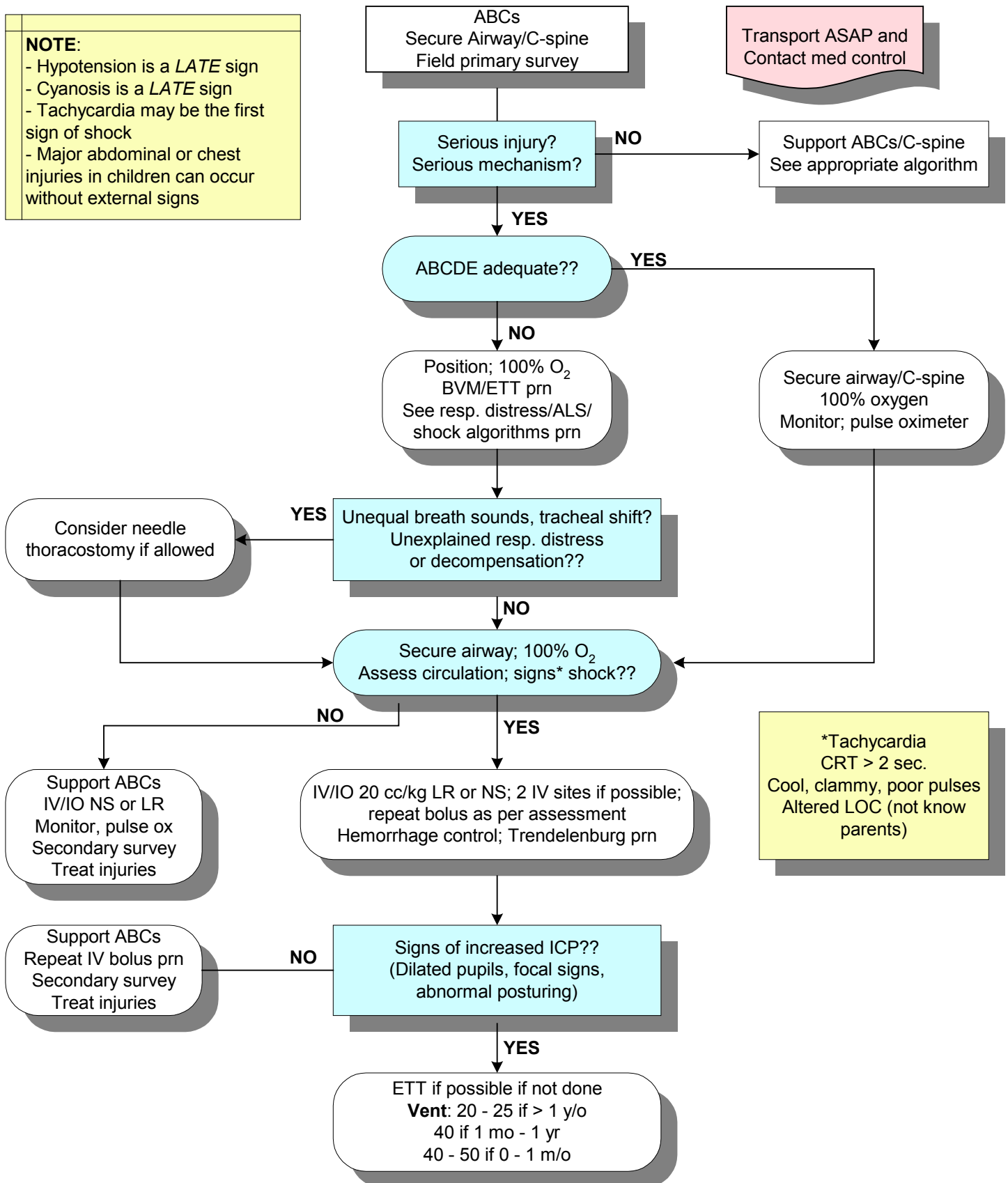


Note: Resuscitation efforts should continue until core temperature approaches normal

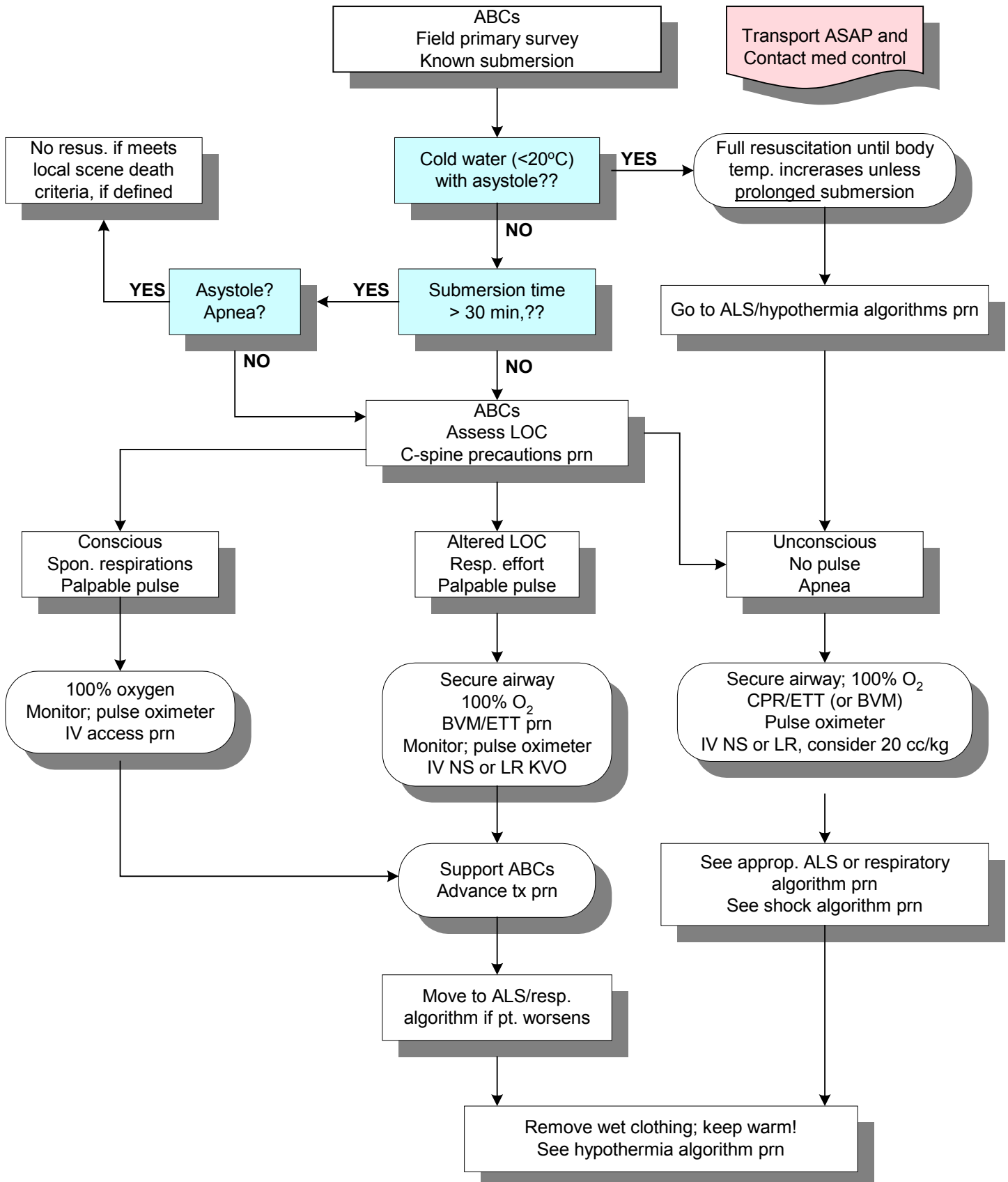
Pediatric Multiple Trauma

NOTE:

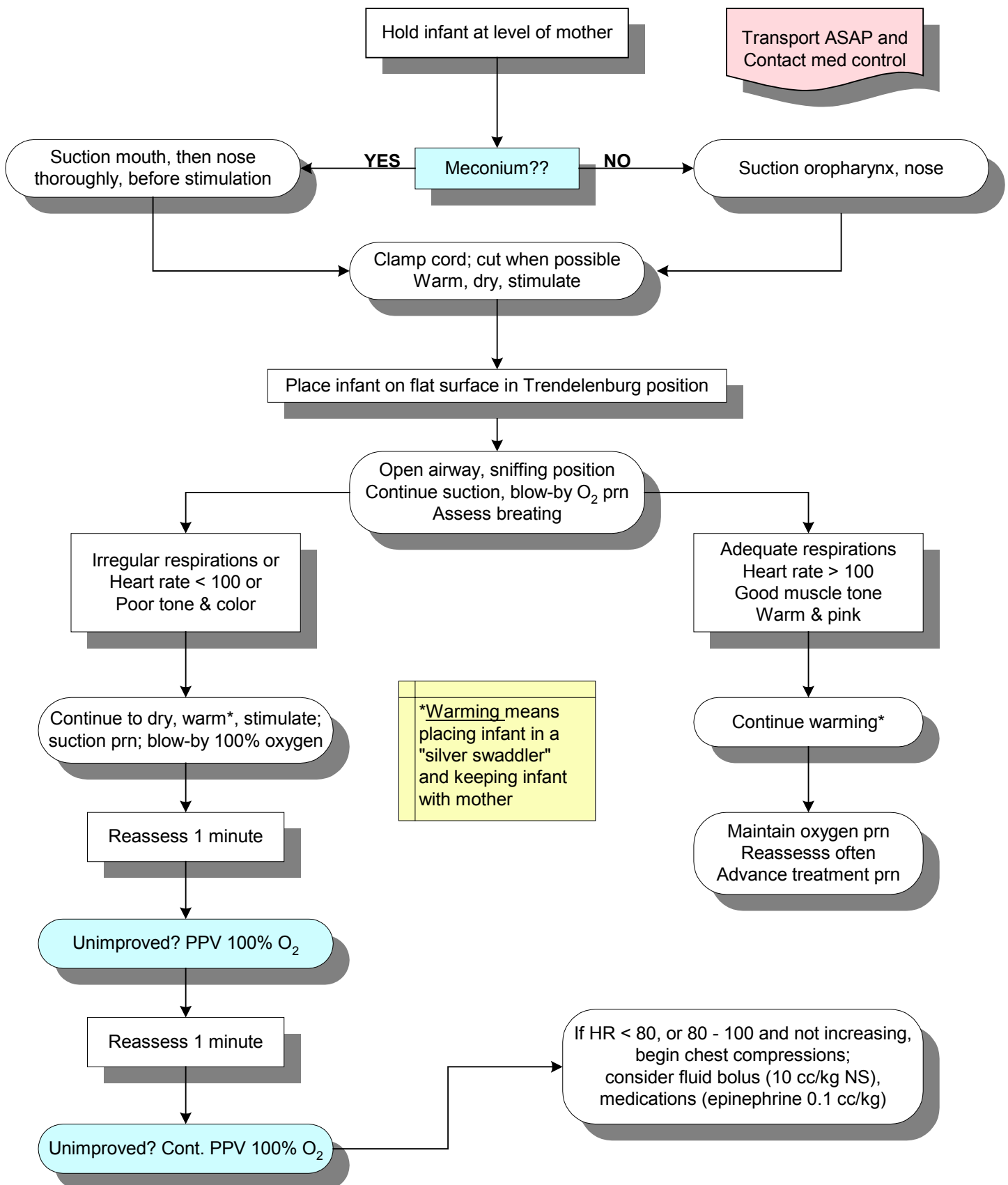
- Hypotension is a *LATE* sign
- Cyanosis is a *LATE* sign
- Tachycardia may be the first sign of shock
- Major abdominal or chest injuries in children can occur without external signs



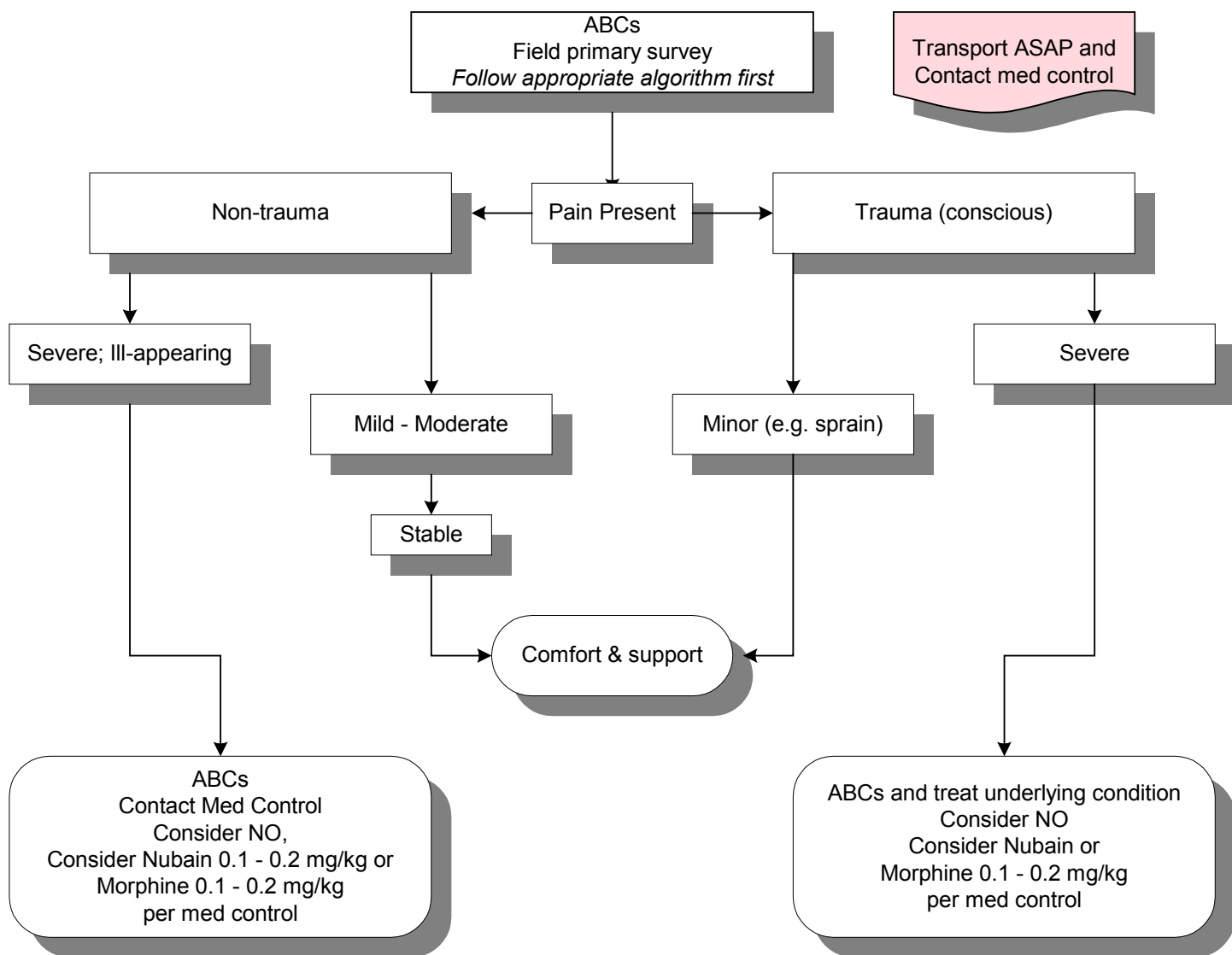
Pediatric Near-Drowning



Newborn Resuscitation

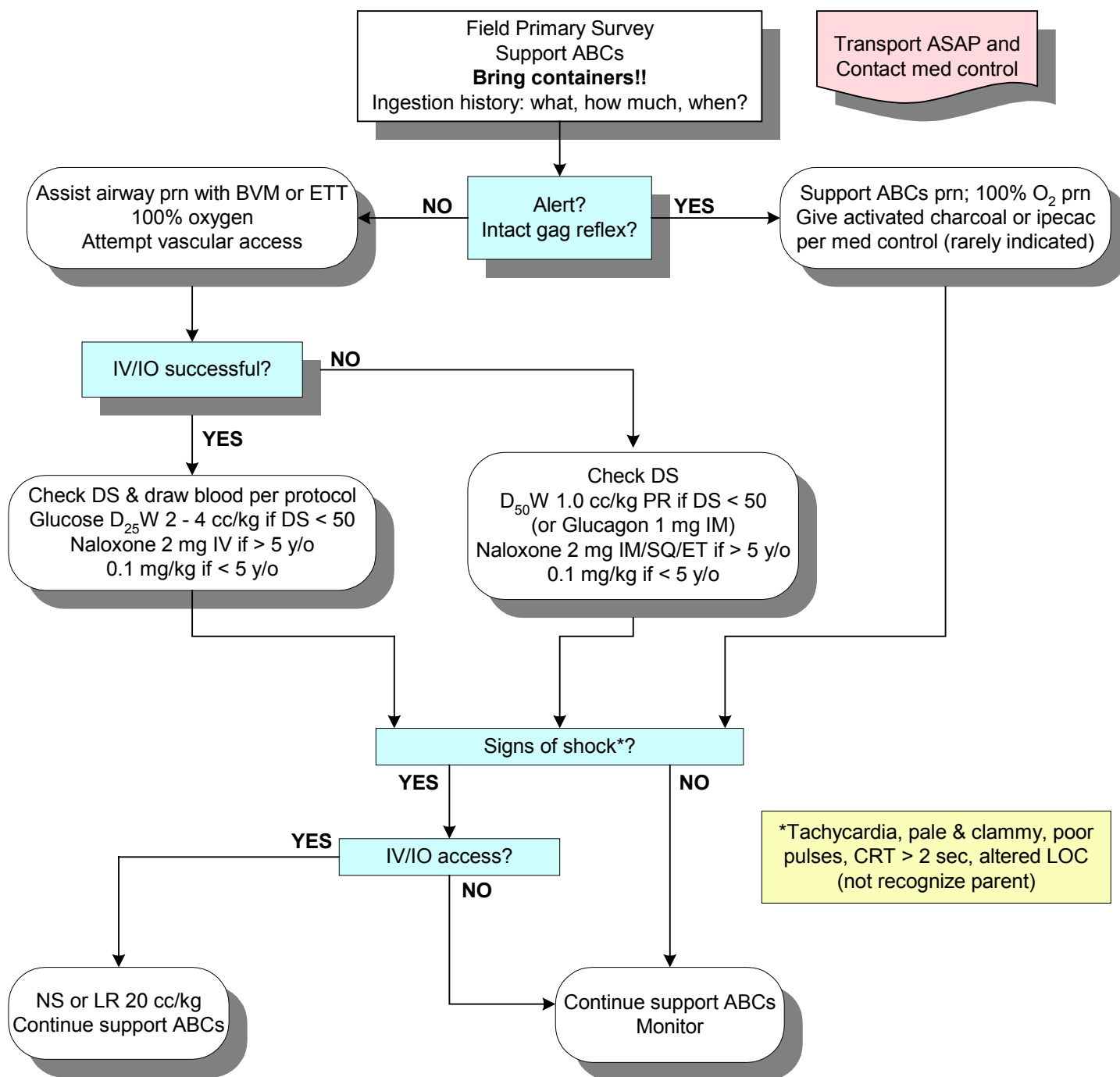


Pediatric Pain



**Pain control not recommended except per med control
for unstable patients**

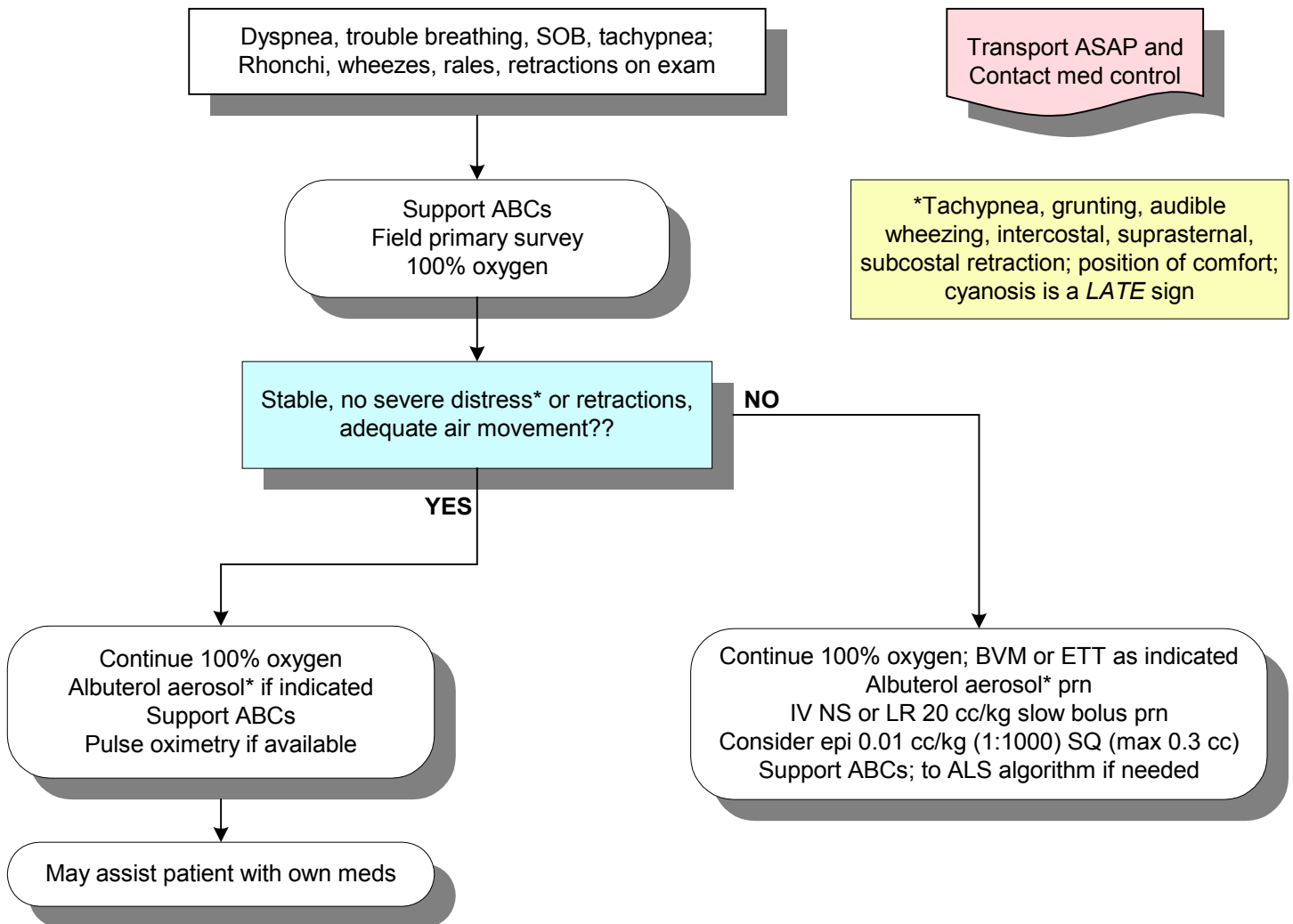
Pediatric Poisoning/Ingestion



Consider specific antidote for severe sx:

β-blockers:	Glucagon 1 mg IM prn
Carbon dioxide:	Oxygen
Narcotics:	Naloxone 0.1 mg/kg IV/IM/ET
Organophosphates:	Atropine 0.1 mg/kg IV q 10 - 30 minutes
Phenothiazines:	Diphenhydramine 1 mg/kg IV/IM (max 50 mg)

Pediatric Respiratory Distress: Lower Airway



Transport ASAP and
Contact med control

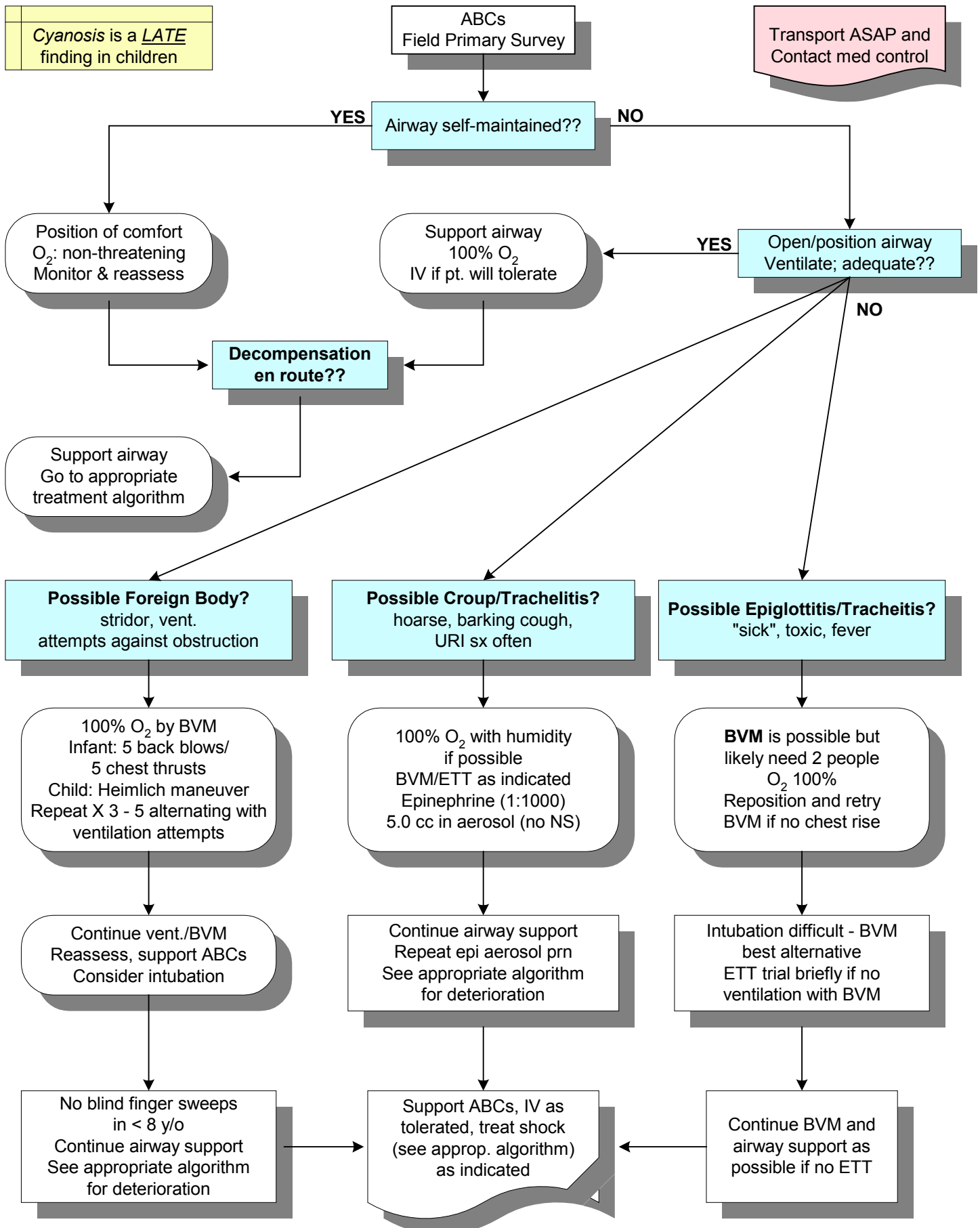
*Tachypnea, grunting, audible wheezing, intercostal, suprasternal, subcostal retraction; position of comfort; cyanosis is a *LATE* sign

*Albuterol aerosol dose: 2.5 mg (0.5 cc) or 5.0 mg (1.0 cc) in 2 - 3 cc NS; for severe attack, use every 15 minutes as per med control

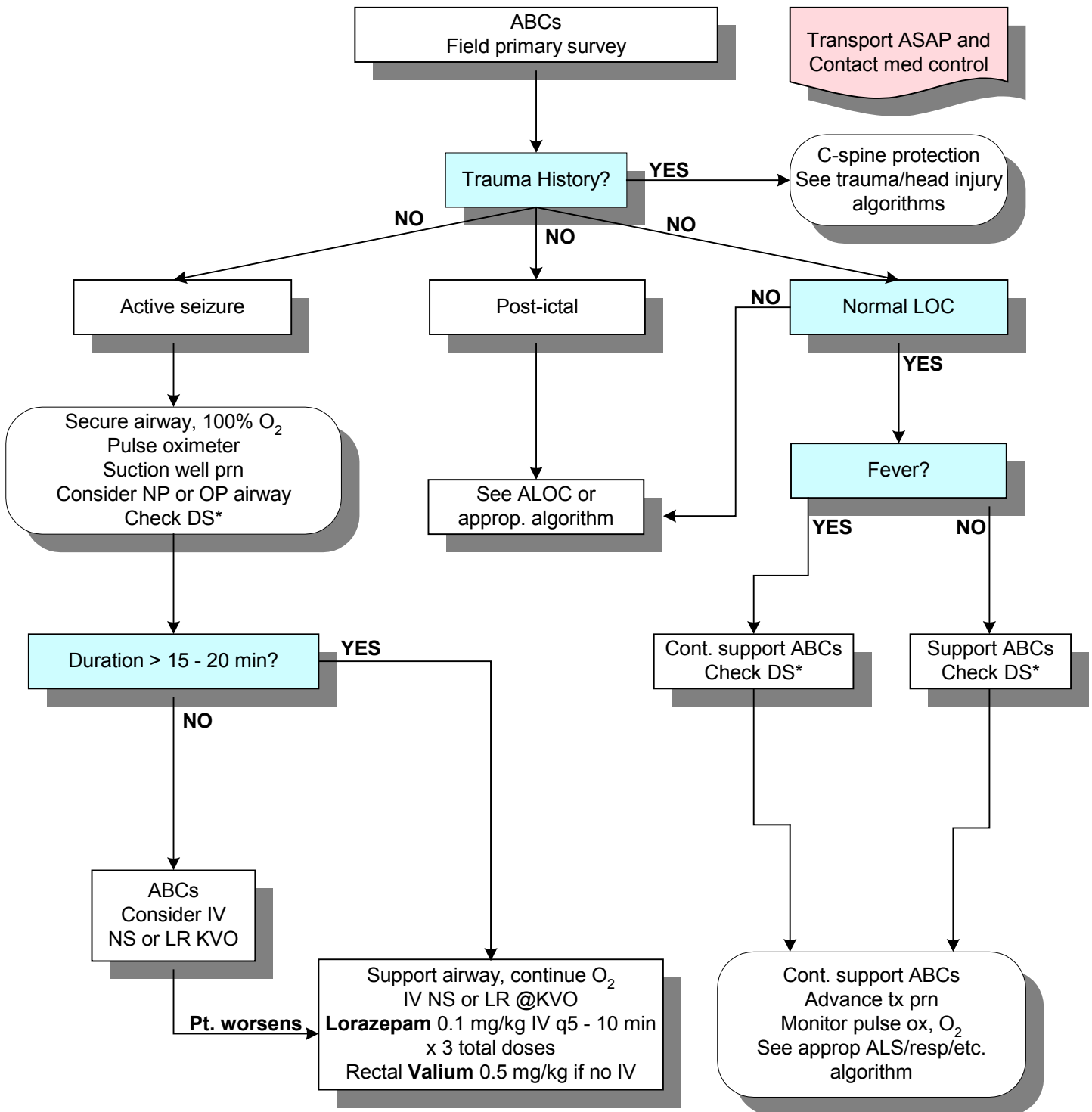
Note: a silent chest with obvious distress indicators inadequate air movement to wheeze!!

Consider other causes of wheezing besides asthma & treat as needed: *RAD, bronchiolitis, foreign body, CHF*

Pediatric Respiratory Distress: Upper Airway

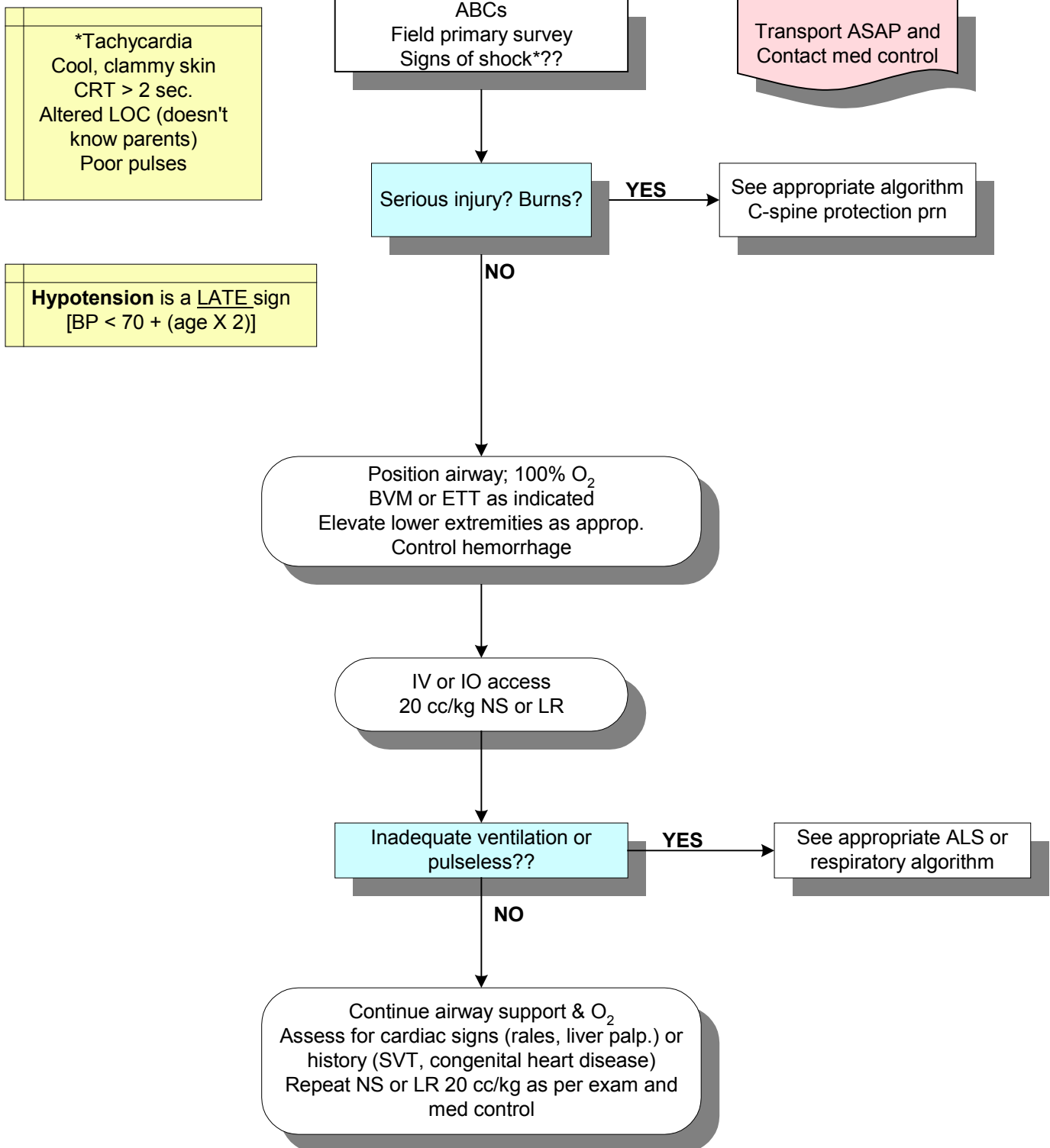


Pediatric Seizures

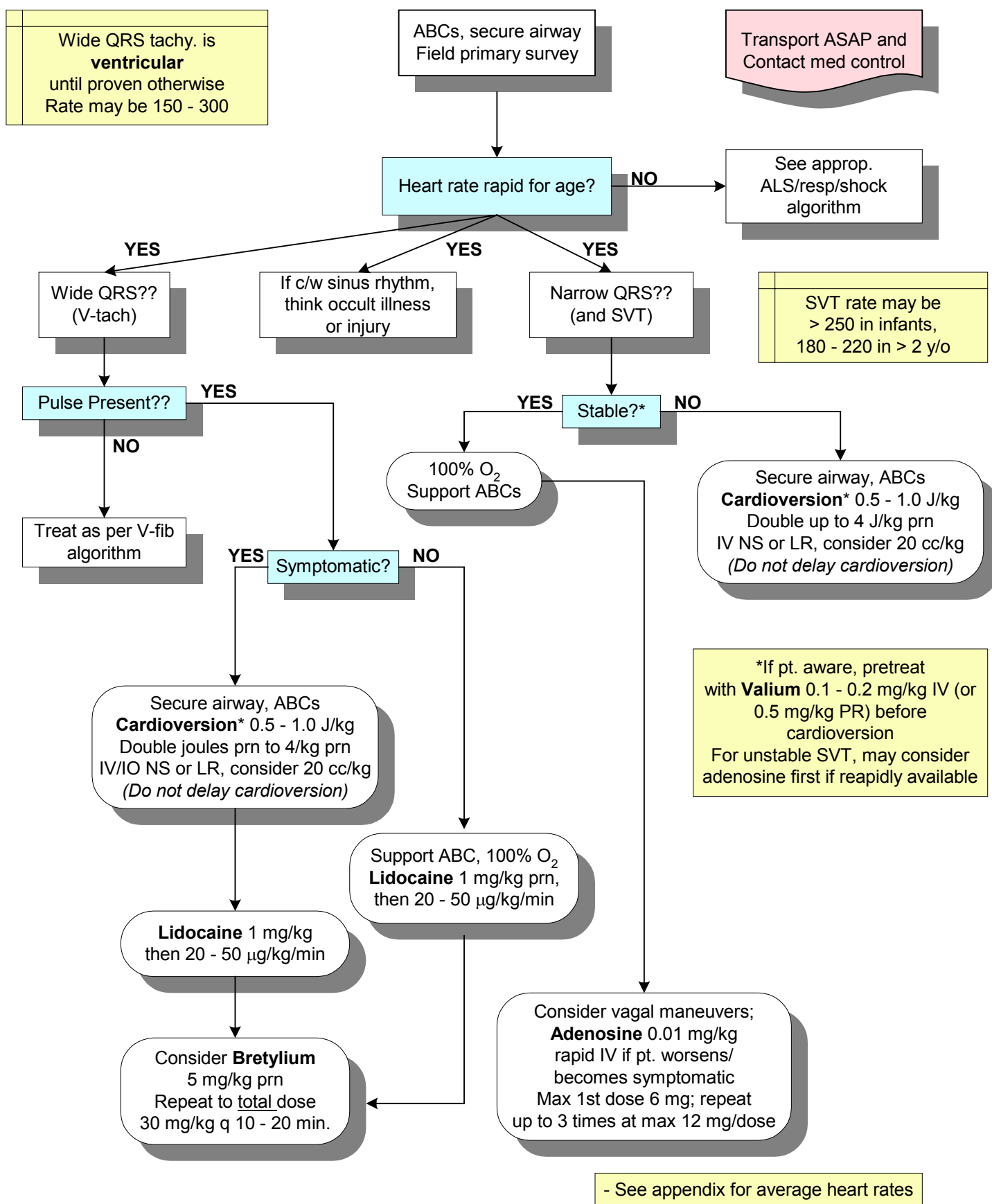


***If DS < 50, give D₂₅W 2 - 4 cc/kg IV or D₅₀W 1 cc/kg PR or Glucagon 1 mg IM**

Pediatric Shock/Hypotension



Pediatric Tachycardia



Appendix

Pediatric Information for Prehospital Care

Vital Signs			
Age	Mean HR	Mean RR	Mean BP
Preemie	125 ± 50	30 – 60	35 – 56 syst.
Newborn	140 ± 50	30 – 60	75/50
1 – 6 mos.	130 ± 45	30 – 40	80/46
6 – 12 mos.	115 ± 40	24 - 30	96/65
12 – 24 mos.	110 ± 40	20 – 30	99/65
2 – 6 yrs.	105 ± 35	20 – 25	100/60
6 – 12 yrs.	95 ± 30	16 - 20	110/60
> 12 yrs.	82 ± 25	12 - 16	120/60

Average Body Weights								
Birth	6 mos.	12 mos.	24 mos.	36 mos.	5 yrs.	10 yrs.	12 yrs.	14 yrs.
3.5 kg	7 kg	10 kg	12 kg	15 kg	20 kg	30 kg	40 kg	50 kg

99 th Percentile Blood Pressure		
Age	Systolic	Diastolic
<7 days	106	
7 – 30 days	110	
1 mo – yrs	118	82
3 – 5 yrs	124	84
6 - 9 yrs	130	86
10 – 12 yrs	134	90

Glasgow Coma Scale			
Response	Adults & Children	Infants	Points
Eye Opening	No response	No response	1
	To pain	To pain	2
	To voice	To voice	3
	Spontaneous	Spontaneous	4
Verbal	No response	No response	1
	Incomprehensible	Moans to pain	2
	Inappropriate words	Cries to pain	3
	Disoriented	Irritable	4
	Spontaneous	Coos, babbles	5
Motor	No response	No response	1
	Decerebrate posturing	Decerebrate posturing	2
	Decorticate posturing	Decorticate posturing	3
	Withdraws to pain	Withdraws to pain	4
	Localizes pain	Withdraws to touch	5
	Obeys commands	Normal spontan. movement	6
Total Score			3 - 15

Tidbits for child care

1. ETT size: $(16 + \text{age}) \div 4$
2. WT: $[2 \times (\text{age in yrs})] \div 8$
3. ETT distance: $3 \times \text{tube diameter (from tip to teeth)}$
4. BP (5th %-ile): $70 \div (2 \times \text{age in yrs})$
5. Blood volume: 80 cc/kg
6. Shock/hypotension: Shock is frequently present in children without the presence of hypotension.

GLOSSARY of ACRONYMS

ABCDE	Airway, Breathing, Circulation, Disability, Expose
ABC	Airway, Breathing, Circulation
ACLS	Advanced Cardiac Life Support
ALOC	Altered Level of Consciousness
ALS	Advanced Life Support
amp	ampule ; amperage; ampere
ASA	aspirin (acetylsalicylic acid)
ASAP	As Soon As Possible
AV	atrioventricular ; arteriovenous
AVPU	Alert Verbal Painful Unconscious
BG	blood gases; blood glucose
BLS	basic life support
BP	blood pressure
BVM	bag valve mask
cc/kg	cubic centimeter per kilogram (this is equivalent to mL/Kg)
CHF	congestive heart failure
Code 3	ambulance running lights and sirens - EMERGENCY
COPD	chronic obstructive pulmonary disease
CPR	Cardiopulmonary Resuscitation
CRT	capillary refill time
CVA	cerebrovascular accident
DHEC	S. C. Department of Health and Environmental Control
DS	dextro stick
Dx	Diagnosis

ECG	Electrocardiogram
EKG	Electrocardiogram
epi	Epinephrine
ET	Endotracheal
ETA	Estimated Time of Arrival
ETT	Endotracheal Tube
GCS	Glasgow Coma Scale
GI	Gastrointestinal
GU	Genitourinary
Hg	mercury
HR	heart rate
Hx	History
ICP	Intra Cranial Pressure
IM	Intramuscular
IO	Intraosseous
IV NS	intravenous normal saline
IV	Intravenous
IV NS KVO	intravenous normal saline, keep vein open
J	(Joule) mechanical equivalent of heat
J/kg	joules/kilogram
joules	mechanical equivalent of heat (j)
JVD	jugular venous distention
KVO	keep vein open
Lido.	Lidocaine
L/min	liter per minute

LOC	loss of consciousness, level of consciousness
LR	lactated ringers
MAST	military antishock trouser (Also referred to as "PASG", pneumatic antishock garment).
mcg	microgram
mEq	milliequivalent
mg/dl	milligram per deciliter
mg/kg	milligram per kilogram
MI	myocardial infarction; mitral insufficiency
mm Hg	millimeters of mercury (a measurement of pressure)
NP	nasopharyngeal
NPO	nullo per os (nothing by mouth)
NRB	non-rebreather (mask)
NS	normal saline
OD	overdose of narcotics
OP	oropharyngeal airway
PEA/EMD	pulseless electrical activity/electrical mechanical disassociation
PEA	pulseless electrical activity
PO	per os (by mouth); used in writing prescriptions
PPV	positive pressure ventilation
PR	pulse rate; per rectum (by rectum)
PRN	as needed
Pt	patient
PVC	premature ventricular contraction

q	Each or every ; used in writing prescriptions, often with a number indicating the hours between doses - e.g. 1 pill Q 8 hours PO
QRS	QRS complex-series of deflections in an electrocardiogram that represent electrical activity generated by ventricular depolarization prior to contraction of the ventricles
Rx	Treatment or medication
SBP	systolic blood pressure
SC	subcutaneous
SIDS	Sudden Infant Death Syndrome
SL q	sublingual every _____
SOB	short of breath
SQ	subcutaneous
SVT	supraventricular tachycardia
TPA	tissue plasminogen activator
tx	treatment ; traction
VS	vital signs
V. Tach.	Ventricular tachycardia
V. Fib.	Ventricular fibrillation
VF/VT	ventricular fibrillation/ventricular tachycardia